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## Livium Expands Clean Energy Waste Recycling Capabilities through Strategic Partnership with Won Kwang S&T

### HIGHLIGHTS

- Livium has signed an MOU with Won Kwang S&T, a South Korean leader in solar energy and resource-circulation innovation, to collaborate on solar panel recycling in Australia
- The MOU leverages Livium's infrastructure and customer relationships to address the rapidly growing solar waste problem, which is projected to exceed 90,000 tonnes annually by 2035<sup>1</sup>
- Initially, Livium will export panels to Won Kwang S&T for recycling, with the ultimate goal of establishing a joint venture to build and operate an Australian PV recycling facility
- Livium will receive service fees from Won Kwang S&T, based on fair market value and cost-recovery principles, to be mutually agreed for each phase
- This strategic move leverages Livium's established and growing supply chain, diversifies revenue streams and captures a fast-growing segment of the clean energy waste sector
- Livium and Won Kwang S&T are now working towards execution of a binding joint development agreement

Livium Ltd (ASX: LIT) ("**Livium**" or the "**Company**") is pleased to announce it has entered into a non-binding Memorandum of Understanding ("MOU") with Won Kwang S&T Co., Ltd ("**Won Kwang S&T**"), a South Korean-based company specialising in photovoltaic (PV) recycling technologies, and currently operating one of the country's major PV recycling facilities. This MOU will expand the recycling capabilities of Livium's wholly owned subsidiary Envirostream Australia Pty Ltd (Envirostream) into solar panels. Livium and Won Kwang S&T are now working towards execution of a binding joint development agreement based on the MOU, which establishes a cooperation model for end-of-life (EoL) PV recycling, with the long-term goal of forming a joint venture to build and operate a PV recycling facility in Australia.

The collaboration is structured over three phases:

1. Livium will supply photovoltaic modules, collected in Australia, to Won Kwang S&T to be recycled in South Korea. This phase will determine market viability and demonstrate the suitability of Won Kwang S&T's technology.
2. Livium will collect photovoltaic modules, partially dismantle them and supply the frameless panels to Won Kwang S&T.
3. Establishment of a joint venture to build and operate an Australian PV recycling plant, using Won Kwang S&T's technology.

Livium will receive service fees from Won Kwang S&T, based on fair market value and cost-recovery principles, to be mutually agreed at each phase.

### Photovoltaic Recycling

Australia is at a critical juncture in the renewable energy transition, with solar panel recycling emerging as both a major challenge and an opportunity. The nation's widespread adoption of rooftop solar, which has created a large,

<sup>1</sup> Solar panel end of life management in Australia 2023 (University of Sydney)

Divisions of Livium



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concentrated volume of end-of-life panels, positions it as a strategic location for establishing recycling infrastructure.

Projections indicate that Australia will generate over 90,000 tonnes of solar panel waste annually by 2035<sup>1</sup>, creating a significant and guaranteed feedstock for a new industry. Currently, only about 10% of Australia's decommissioned solar panels are recycled<sup>1</sup>, a figure that highlights the urgency of the problem.

A national product stewardship scheme, expected imminently, will likely ban panels from landfill and require producers to fund their recycling<sup>2</sup>. This, combined with amendments to the Basel Convention that restrict the export of solar waste, is creating a strong impetus for domestic processing and will be a key driver for the Australian solar panel recycling market.

## The PV Recycling Market

Australia's PV recycling market is in its early stages, facing challenges in logistics, technology, and infrastructure to handle the increasing volume of end-of-life solar panels. The key challenges that remain are the high upfront costs of recycling infrastructure, which are currently six times higher than landfilling<sup>1</sup>, and a lack of onshore markets for recycled materials like glass.

The Australian PV Recycling market is projected to grow significantly in the next few years. From a market size of approximately US\$3.5 million in 2024, it is expected to reach over US\$10.8 million by 2033<sup>3</sup>. Globally, the solar panel recycling market is also expanding, with some reports valuing it at around US\$492.8 million in 2024 and forecasting a rapid increase to over US\$2.67 billion by 2034<sup>4</sup>.

## Strategic Expansion into PV Recycling

Livium's strategic move into PV recycling is a natural and well-supported expansion of the Company's core competencies, aligning with its commitment to leveraging adjacent circular economy opportunities - [a plan initially announced in June](#). The Company already possesses the necessary infrastructure and expertise, including a "fee-for-service" commercial model, established capabilities in hazardous material collection and pre-processing, and strong relationships with a customer base that is already seeking solutions for these new waste streams.

This asset-light approach, which involves partnering with technology providers like Won Kwang S&T, allows Livium to enter the market with minimal initial investment and scale operations in a phased, low-risk manner. By moving into solar panel recycling, Livium is able to diversify its revenue streams and capture a fast-growing segment of the e-waste market, solidifying its position as a leading partner in the clean energy transition.

### Comment from Livium CEO and Managing Director, Simon Linge

*"This partnership with Won Kwang S&T is a step forward in our strategy to expand our recycling capabilities into adjacent clean energy waste opportunities. It allows us to leverage our existing infrastructure, customer relationships, and operational competencies to address the rapidly growing problem of solar panel waste. By starting with a phased, asset-light approach, we are demonstrating the viability of this technology while positioning Livium to become a leader in Australia's PV recycling market as it develops."*

### Comment from Won Kwang S&T CEO & Founder, Sang Hun Lee

*"Partnering with Livium, a leading recycler of clean energy waste, is a logical step in our growth strategy. Australia has been identified as a key growth jurisdiction for Won Kwang S&T, and this collaboration gives us the opportunity to further test and optimize our PV recycling technology, which is essential before a broader rollout."*

Authorised for release by the Livium Board.

<sup>2</sup> NSW leads the way towards national panel reuse and recycling scheme

<sup>3</sup> Australia Solar Panel Recycling Market Size and Share

<sup>4</sup> Solar PV Recycling Market Size

# ASX ANNOUNCEMENT



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## Forward-looking statements

This announcement contains forward-looking statements. Forward-looking statements are subject to a variety of risks and uncertainties that it is beyond the Company's ability to control or predict and which could cause actual events or results to differ materially from those anticipated in such forward-looking statements. Investors should be aware that past performance should not be relied upon as being indicative of future performance.

## About Livium

Livium (previously Lithium Australia) is aiming to lead and enable the global transition to sustainable lithium production. The Company operates Australia's market leading battery recycler, Envirostream, a revenue and profit generating business which is well-placed to capitalise on growing lithium-ion battery demand. Additionally, the Company aims to commercialise patented lithium extraction technology (LieNA®), through a 50:50 joint venture with Mineral Resources Ltd (ASX: MIN), and critical battery material lithium ferro phosphate (LFP), through wholly owned subsidiary VSPC.

## About Won Kwang S&T

Won Kwang S&T Co., Ltd. is a South Korean leader in solar energy and resource-circulation innovation, specialising in the full life-cycle of photovoltaic systems — from design and manufacturing, through construction and post-installation management. The company holds multiple proprietary technologies and international quality and environmental certifications (including ISO 9001, ISO 14001, K-Mark and Q-Mark), and is recognised as an Excellent Procurement Product enterprise by the Korea Energy Agency. Recently, Won Kwang S&T has broken new ground with its pioneering commercialisation of in-situ heating separation technology for end-of-life solar modules, positioning itself at the forefront of sustainable waste reuse in the clean energy sector.

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